

## TruVent™ Breathers

### Nuclear Decommissioning

<b>Customer:</b>	NDA, UK
<b>Application:</b>	Nuclear Decommissioning
<b>Products:</b>	Vent Breathers
<b>Primary Motive:</b>	Process Optimisation
<b>Location:</b>	UK
<b>Project Date:</b>	2016-2021 (on-going)
<b>Division:</b>	Segensworth, UK



#### Customer Overview:

The customer is a UK governmental organisation dealing with nuclear waste from operating and decommissioned power stations.

#### Customer's Requirement:

The customer needed vent breathers to safely release gases from waste containers.

Radiolysis of nuclear waste water to vent hydrogen:

- Accumulation of hydrogen within the container could pose a risk of explosion
- Waste container to withstand and provide containment against any potential releases.

#### Porvair's Solution:

To effectively manage gas generation, Porvair supplied TruVent™ breathers for waste containers.

These were employed to regulate the build-up of pressure and allow the containers to breathe whilst preventing particulate release (99.97% > 0.3µm).

#### Project Overview:

The TruVent™ breathers were manufactured from 316L stainless steel, offering a HEPA grade efficiency of 99.97% @ 0.3µm and were qualified and tested to resist aggressive conditions.

The filters were tested to mimic an internal hydrogen explosion, under static and dynamic pressure conditions. They maintained integrity and showed no significant loss of performance.

#### Other Opportunities:

Porvair has vast experience in the design and manufacture of custom vent breathers for a variety of waste containers.

Specially designed vent breathers supplied to nuclear storage users include:

- HEPA (THE) grade shielded vent breathers for spent fuel drying and storage
- WIPP compliant waste package vent breathers
- 500 litre drum breathers
- 3m<sup>3</sup> box breathers.

Porvair manufactures custom engineered solutions for every stage of the Nuclear Fuel Cycle and is working extensively in the Nuclear Fusion market sector.

